PATENT SPECIFICATION

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(19)

(54) A BICYCLE HANDLEBAR STEM

(71) We, CINO CINELLI & C. S.n.c., an Italian General Partnership, of 45, Via Egidio Folli, Milan, Italy, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a handlebar stem for a bicycle. The invention is particularly, but not exclusively, intended for use with racing bicycles.

In conventional racing bicycles, a handlebar is secured by a clamp to a handlebar stem of circular cross-section having a bifurcated lower end by which it is joined to a fork. Particularly, said clamp comprises a slotted transverse tubular piece formed at the upper end of the handlebar stem which is thus provided with two arms which can be drawn towards one another to press against the handlebar by means of a screw passing through said clamp.

This conventional approach suffers from a number of disadvantages, among which are poor streamlining, some structural complexity, unattractive aesthetic appearance, and a risk of breakage in one of the two clamp arms due to the tool used to tighten the screw causing damage to such clamp arm.

According to the invention, there is provided a handlebar stem for a bicycle, having a clamping device at one end comprising a bore for receiving a handlebar, and a slider accommodated in the handlebar stem and forming part of the wall of said bore, said slider being movable transversely of said bore under the control of screw means to engage and clamp said handlebar.

The invention will be more clearly understood from the following description with reference to the accompanying drawing in which:—

Figure 1 is a perspective view of a handlebar stem in accordance with the invention having a handlebar mounted thereon,

Figure 2 is a fragmentary axial sectional view of the handlebar stem shown in Figure 1,

Figure 3 is a sectional view on reduced scale taken along line III—III of Figure 2, with the clamping slider removed, and

Figure 4 is a perspective view of the clamping slider.

Figure 1 shows a handlebar stem 1 for connecting a handlebar M to a fork (not shown) of a bicycle, such as a racing bicycle. The bifurcated configuration of the lower end of said stem can be modified as desired and does not form part of the invention.

In accordance with the invention, the handlebar stem 1 is distinguished from conventional handlebar stems in that a bore 2 for the handlebar M is provided at its upper end. Thus the stem 1 does not have resilient arms capable of being drawn towards one another by a screw, for clamping a handlebar inserted therebetween.

A portion of the wall of said bore 2 is formed by a roughened arcuate face 3 of a curvilinear portion 20 of a slider 4 which is slidably carried in said stem 1. This slider 4 has a non-circular elongated projection 21 having an inclined end surface 6. The projection 21 is located in a correspondingly shaped bore 5 formed in said handlebar stem 1, while said portion 20 is accommodated in a recess 22 in the inner surface of the bore 2. In order that the slider 4 may be inserted into position through the bore 2, the height "h" of the slider portion 20 is substantially less than the diameter of the bore 2. The bottom surfaces of the stem 1 at the ends of said bore 2 are bevelled at 30 (Figure 3), so that insertion of the handlebar M is facilitated.

The inclined surface 6 cooperates with a like surface of a block 7, which is fitted within said bore 5 and is movable in the direction of arrows A (at right angles to the movement direction of slider 4) by means of a screw 8 in a tapped hole in the block. The screw 8 passes through a transverse hole 31 in the handlebar stem 1. Its head is ac-

commodated within an enlarged region of said hole 31 and acts through a washer 9 against a step 32.

By turning said screw 8 in one direction, the two inclined surfaces are moved relative to each other, thus moving said slider 4 transversely inwardly of the bore 2, and hence pressing the arcuate face 3 against the handlebar M and finally clamping the latter in the bore 2. Turning the screw 8 in the opposite direction enables the handlebar M to be released and thereby removed.

A hole 11, provided to enable the hole 5 to be cut during manufacture, may subsequently be closed by means of a plug (not shown).

Alternatively the slider 4 may be arranged to be pushed against the handlebar M, by a screw directly engaging with the slider and extending along or parallel to the axis of said handlebar stem 1 and projecting from the elbow 10 thereof.

WHAT WE CLAIM IS:—

1. A handlebar stem for a bicycle, having a clamping device at one end comprising a bore for receiving a handlebar, and a slider accommodated in the handlebar stem and forming part of the wall of said bore, said slider being movable transversely of said bore under the control of screw means to engage and clamp said handlebar.

2. A handlebar stem as claimed in claim 1, wherein said slider has an inclined surface engaging with an inclined surface of a block mounted in said stem and said screw means comprises a screw engaging with said block for moving said block relative to said slider thereby to move said slider transversely relative to said bore.

3. A handlebar stem as claimed in claim 1, wherein said screw means comprises a screw directly engaging with said slider.

4. A handlebar stem as claimed in claim 1, 2 or 3, wherein said slider has an arcuate face forming said wall part and a non-circular projection terminating with an inclined surface.

5. A handlebar stem for a bicycle, substantially as hereinbefore described with reference to the accompanying drawing.

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1 SHEET This drawing is a reproduction of the Original on a reduced scale

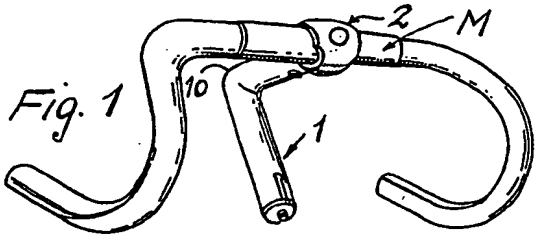

Fig. 1

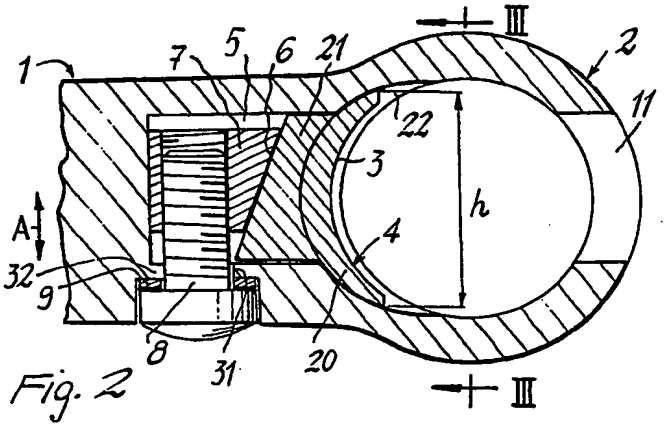

Fig. 2

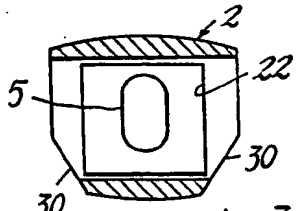

Fig. 3

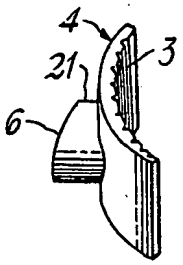

Fig. 4

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